



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
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C3-8-2
Job Sheet 183381



005530

Part No: C3-8-2

Job Qty: 8 ea

Part Name: Solenoid



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 9/17/18

Job Tracking No:

Due Date: 10/5/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG C3-8-2 Rev 3 IPP Rev A 18.04.06 new issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	8 Ea	10/5/18	10/5/18	0.00	0.00	Start Up Small Fab-4		
100	Small Fab	8 pcs	10/5/18	10/5/18	0.00	0.40	Small Fab-9		
110	QC	8 pcs	10/5/18	10/5/18	0.00	0.00	QC5		
130	Packaging	8 pcs	10/5/18	10/5/18	0.00	0.00	Packaging3-2		
140	QC21-FG	8 Ea	10/5/18	10/5/18	0.00	0.00	QC21		

Part Op 100 - 1-Assemble as per DWG sheet 1. ***Note 32446 22-16 crimp connectors supplied loose as per note 1***
Descriptions: 130 - Bag and tag

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
32446	Crimp Terminal	16 Ea (2 ea)	90-Start up Operation	3089146
92373A143	Spring Pin	8 Ea (1 ea)	90-Start up Operation	3060727
C3-8-2-1	Solenoid	8 Ea (1 ea)	90-Start up Operation	3109590
C3-8-2-2-PO	Solenoid Pin Spacer	8 Ea (1 ea)	90-Start up Operation	3075400
C3-8-3-1	Spacer	8 Ea (1 ea)	90-Start up Operation	3107986

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	32446	16	606	0
	92373A143	8	92	0
	C3-8-2-1	8	13	0
	C3-8-2-2	8	0	0
	C3-8-3-1	8	71	0



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S111400



Part: C3-8-2

Job No: 183381

Serial No/Batch: S111400

Revision: 3

Inspector:

Exp Date:

Instructions:

Date: 09/19/18

ifications

ild not be found.

Plex 9/17/18 11:00 AM Dart.lajeunesse.marie

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

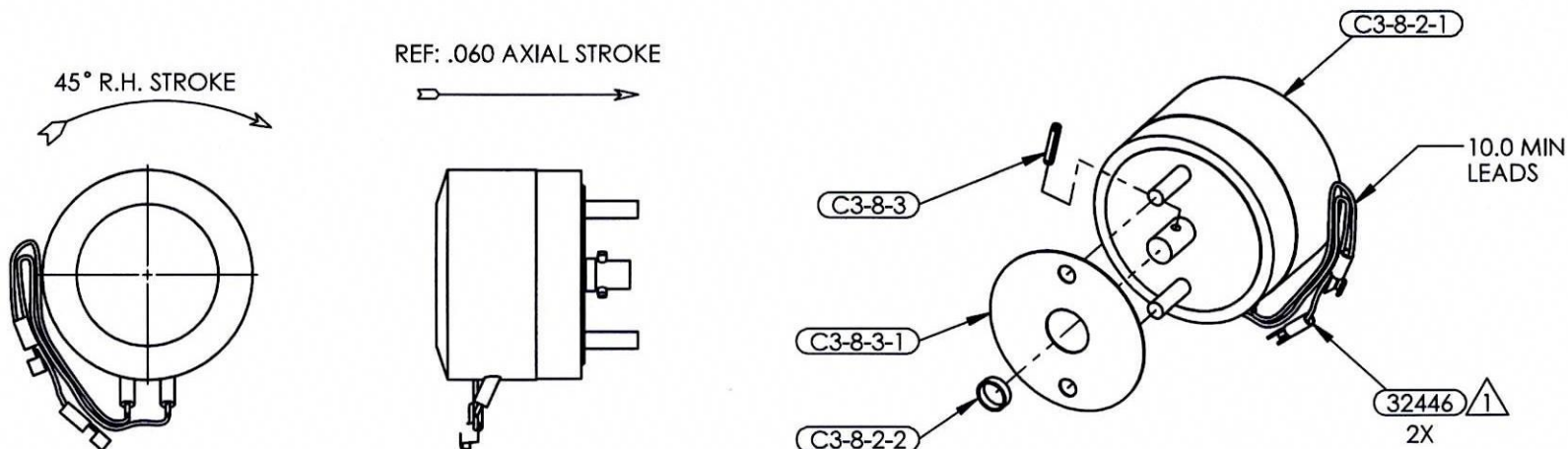
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		ADDED SPACER C3-8-31.	10/10/2012	RJC	DW
1A	14-0111	CH'D TITLE BLOCK WAS RED BARN IS DART. ADDED ENGRAVE NOTE. ADDED NOTE Δ .	8/7/2014	DJN	RW
2	14-0195	C3-8-2-1 CH'D DIM WAS LIMITS $\varnothing.0933-.0937$ IS LIMITS $\varnothing.094-.097$. ADDED "(CLOCKWISE)" TO NOTE Δ . CH'D NOTE 4 WAS PLACE BUSHING AND PIN IN PLACE AS SHOWN AFTER DRILLING IS INSTALL SPACER AND PIN IN PLACE AS SHOWN ON SHEET 1 AFTER DRILLING. ADDED ENGRAVE BATCH NUMBER NOTE. C3-8-3-1 CH'D DIM WAS $\varnothing2.285$ IS $\varnothing1.95$. CH'D TOLERANCE ON NON-CRITICAL DIMENSIONS.	10/23/2014	DPD	JAG
3	15-0243	UPDATED TO NEW DRAFTING STANDARDS. C3-8-3-2 DELETED; REPLACED WITH 32446 .	8/25/2015	DPD	JAG



NOTE:

Δ CONNECTIONS SUPPLIED LOOSE.

DART AEROSPACE	
TITLE SOLENOID ASSEMBLY	
DWG NO. C3-8-2	REV 3
MAT'L UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX $\pm .005$ FRACTIONS $\pm 1/8$.XX $\pm .01$ ANGLES $\pm .5^\circ$.X $\pm .1$	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:2	DATE 12/19/2001
SHEET 1 OF 4	

ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS	PG.
		B/O	C3-8-2-1	1	SOLENOID		TESTCO #152951-001	1,2
			C3-8-2-2	1	SOLENOID PIN SPACER	303 S.S.		3
		B/O	C3-8-3	1	SPRING PIN	18-8 S.S.	$\varnothing3/32$ X 1/2 (MCMaster-CARR #92373A.143)	1
		B/O	C3-8-3-1	1	SPACER	PETG		4
		B/O	32446	2	22-16 AWG KNIFE CONNECTOR		(ALLIED ELECTRONICS 32446)	1

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

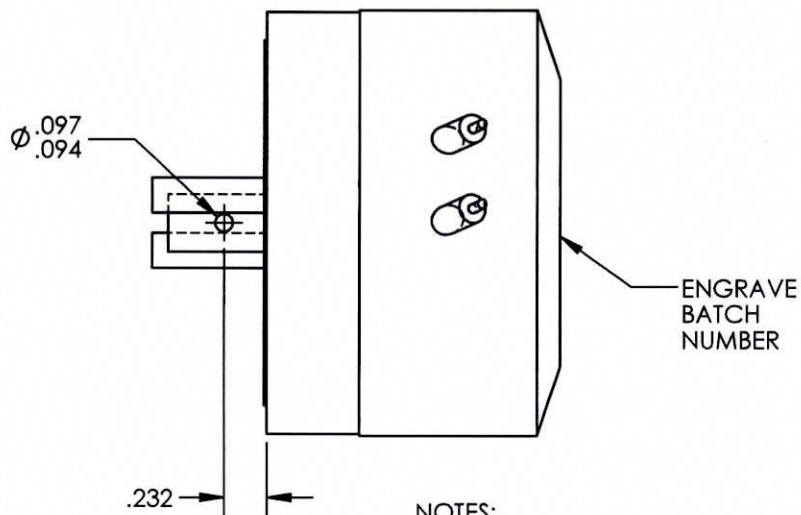
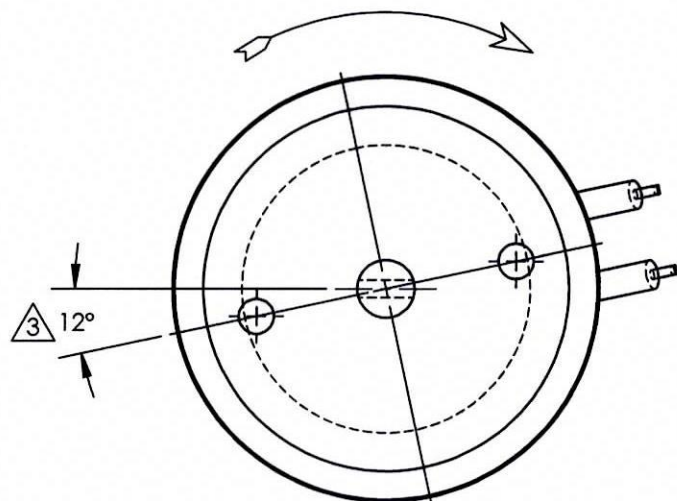
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
2	14-0195	C3-8-2-1 CH'D DIM WAS LIMITS Ø.0933-.0937 IS LIMITS Ø.094-.097. ADDED "[CLOCKWISE]" TO NOTE 3. CH'D NOTE 4 WAS PLACE BUSHING AND PIN IN PLACE AS SHOWN AFTER DRILLING IS INSTALL SPACER AND PIN IN PLACE AS SHOWN ON SHEET 1 AFTER DRILLING. ADDED ENGRAVE BATCH NUMBER NOTE.	10/23/2014	DPD	JAG



NOTES:

1. USE C3-8-2-F1 FIXTURE FOR DRILLING THE PIN HOLE.
2. REMOVE COIL SPRING BEFORE DRILLING HOLE.
3. TURN SHAFT AS SHOWN IN FIXTURE BEFORE DRILLING (CLOCKWISE).
4. INSTALL SPACER AND PIN IN PLACE AS SHOWN ON SHEET 1 AFTER DRILLING.

C3-8-2-1

SOLENOID WITH PINNED HOLE

DART AEROSPACE	
TITLE SOLENOID ASSEMBLY	
DWG NO. C3-8-2	REV 3
MAT'L UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DRAWN BY: CANAM
.XXX ± .005	APPROVED <i>D. Wood</i>
.XX ± .01	HEAT
.X ± .1	TREAT
	FINISH
	SPEC
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:1	DATE 12/19/2001
SHEET 2 OF 4	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

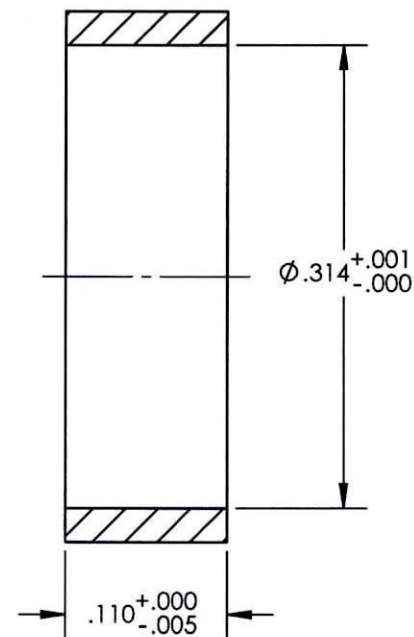
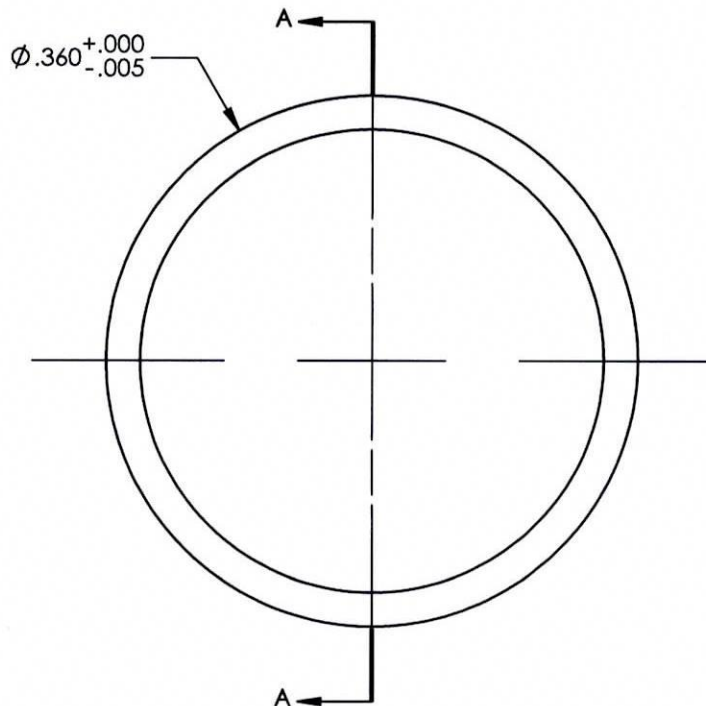
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐								
		OTHER : _____							

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REVISIONS				
REV	ECR	DESCRIPTION	DATE	INITIAL
				APPROVED



SECTION A-A

C3-8-2-2

SPACER

DART AEROSPACE	
TITLE SOLENOID ASSEMBLY	
DWG NO. C3-8-2	REV 3
MAT'L 303 S.S.	DRAWN BY: CANAM
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D Wed</i>
.XXX ± .005 FRACTIONS ± 1/8	HEAT
.XX ± .01 ANGLES ± 5°	TREAT
.X ± .1	FINISH
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	SPEC
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	USED ON MODEL
SCALE 8:1	DATE 10/31/2001
SHEET 3 OF 4	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

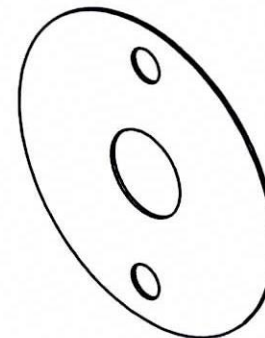
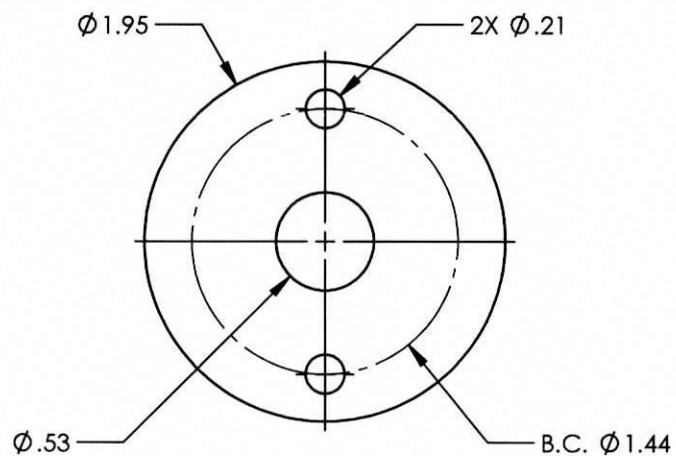
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		ADDED SPACER C-3-8-3-1	10/10/2012	RJC	DW
2	14-0195	C3-8-3-1 CH'D DIM WAS Ø2.285 IS Ø1.95.	10/23/2014	DPD	JAG



C3-8-3-1

SPACER

DART AEROSPACE	
TITLE SOLENOID ASSEMBLY	
DWG NO. C3-8-2	REV 3
MAT'L PETG	DRAWN BY:
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	APPROVED <i>D. Weil</i>
.XXX $\pm .010$	FRACTIONS $\pm 1/8$
.XX $\pm .03$	ANGLES $\pm .5^\circ$
.X $\pm .1$	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R	USED ON MODEL
2. DIMENSIONAL LIMITS APPLY AFTER PLATING	
SCALE 1:1	DATE
SHEET 4 OF 4	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
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Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								